

INFORMATION REPORT INFORMATION REPORT

CENTRAL INTELLIGENCE AGENCY

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COUNTRY USSR (Moscow Oblast)

REPORT

SUBJECT Plant 456

DATE DISTR. 20 March 1961

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REFERENCES

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DATE ACQ.

THIS IS UNEVALUATED INFORMATION

A report on Plant 456. Moscow.

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This report describes the administration of the plant, a tool planning section, a number of individual shops, plant production, materials used, plant security, schools, and locations of various plant facilities.

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STATE	X	ARMY	X	NAVY	X	AIR	15	NSA	X	OCR	X	NIC	X
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INFORMATION REPORT INFORMATION REPORT

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ATTACHMENT

PLANT 456

Plant Administration

1. The administration for Plant 456 consisted of a director, an assistant, a technical engineer, a mechanical engineer, and an energetics engineer. (See the plant organizational chart on page 17 and the plant layout on page 18.) The following personnel filled these positions:

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- a. Grishin (fnu), who was director of the plant until the end of 1950 or the beginning of 1951.

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- b. Kolitsev (fnu), who replaced Grishin and was director of the plant until the beginning of 1956.

- c. Mushishkov (fnu), who was assistant to the director

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- d. Yakov Abramovich Shifrin, who was the chief technological engineer.

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2. Khrenov (fnu) was chief of the personnel department of the plant until the end of 1950.

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Technological Office

3. The technological office¹ consisted of two groups: the design group and the technology group. The chief technological engineer was in charge of the two groups. The following personnel worked in the technological office:

a. Vadrvakov (fnu), a draftsman

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b. Derman (fnu), a draftsman

c. Avdeyev (fnu), an apprentice draftsman.

d. Takhuel (fnu), a draftswoman

e. Agriskov (fnu), an experienced draftsman

OGT

4. The following personnel worked in the OGT (Department of the Chief Technologist):¹

a. Karan (fnu), assistant to the chief technological engineer.

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b. Gorev (fnu), who first worked as a designer and later became chief of the OGT.

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- c. Nadya (fnu), who was a secretary who distributed the work.

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- d. Khavenson (fnu), a draftsman of cutting instruments with the title of engineer

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- e. Margulis (fnu), a draftsman with the title of engineer.

- f. Sergey Agriskov, a competent draftsman

- g. Borovikov (fnu), a draftsman.

Tool Planning Section and OKB

5. The tool planning section 1. and the OKB drew up plant projects. There was also a machine planning section, but it's work was very elementary and was limited only to making drawings of broken gears or other machinery parts so that they could be repaired at once. The tool planning section made all the plans for the tools used at the plant and was divided into three groups: the tool, tooling, and dieing groups, of which the tooling group was the largest.

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6. The tool planning section received drawings of parts from the OKB and then drew up the tooling projects for them. The problems were resolved by the chief of the tool planning section and the OKB. Personnel of the tool planning section were denied entrance to the OKB offices, and thus if any problems arose, someone from the OKB had to go to the tool planning section to discuss it. There were no restrictions on relationships between personnel of the OKB and the tool planning section.

7. The mission of the OKB was to direct and test all plant designs. [REDACTED]

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[REDACTED] The following personnel worked in the OKB:

a. Glushko (fnu), who was chief of the OKB [REDACTED]

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[REDACTED]

b. List (fnu), who was chief of an unknown design section. [REDACTED]

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[REDACTED]

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C-O-N-F-I-D-E-N-T-I-A-L

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c. Vitko (fnu), who was chief of a design group.

OTK

8. The OTK was [redacted] had probably been established when the plant first went into operation. Its function in Plant 456 was the same as that in any other Soviet plant, i.e. to inspect production. It was very strict, and had no relationship either with the scheduling of plant production or with the OKB. OTK members were not allowed free entry to OKB offices, but, as in the case of other plant personnel, had to have special passes. (See the diagram of the organizational structure of the OTK on page 20.) 50X1-HUM
9. The OTK chief was in charge of all shop inspection teams. [redacted] 50X1-HUM
10. The OTK chief and the inspection teams were not subordinate to the plant director, and thus had complete freedom to accept or refuse a plant part or article. Refusal did not occur frequently, since the item was manufactured after the plans had been approved. Every shop had an inspection chief aided by four or five assistants.
11. There were military representatives in the OTK who belonged to the infantry, artillery, and air force, and the majority of them were officers. Military personnel had priority over the shop OTK inspectors, and their decisions or suggestions had to be accepted. 50X1-HUM
12. [redacted] many plant fitters [redacted] later became inspectors and [redacted] were very efficient. Personnel changes in the OTK were not frequent. [redacted] personnel changes among shop inspectors for reasons of work or for personal reasons. 50X1-HUM

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C-O-N-F-I-D-E-N-T-I-A-L

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13. The OTK checked about ten per cent of the common parts such as caps, screws, and washers, and all of the precision parts. The acceptance standards were almost the same for all projects

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If the technological aspects of a project changed, the acceptance standards would also change.

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14. The shop inspectors used a triangular-shaped stamp containing the inscription OTK and the shop number. If the part being checked was fragile or a high-precision part, a dark blue ink stamp was used. Some parts were checked more than once

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This double check was conducted only to make sure that a particular part was completed, and if there was any doubt, it was tested in the main testing and measurements laboratory.

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15. The military inspectors put a stamp or ink stamp on all parts. The type of stamp used depended on the part being inspected, and the stamps were similar to those used by the shop inspectors.

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16. two types of testing equipment used by the OTK. One was a machine for testing vibration in Shop No. 6, and the other was for testing humidity and pressure, in Shop No. 11. The equipment for testing vibration consisted of a table which was about 50 centimeters long and was equipped with an electric motor which rotated eccentrically. The capacity of this motor limited its use to only small parts. The equipment for testing humidity and pressure consisted of a compressor and a rubber hose which conducted water to the part being tested. spheres (shar) being tested with this equipment (see sketch No. 1 on page 21). The purpose of the check was to test the welding. On one occasion a sphere break during testing. The breakage was due not to faulty welding but to the fact that material with insufficient resistance had been used.

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Shops

17. Shop No. 1 was dedicated to painting and galvanizing parts. Aluminum and steel parts were painted with black enamel; and aluminum, steel, and ferrous metals were galvanized with chrome and nickel. some parts could not be galvanized with "boronich" (sic) because they would rust; This shop was not restricted, and one could enter freely. The shop chief was a Russian (sic)

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woman, name unknown, and the majority of the workers were women.

18. Shop No. 2 was a machine shop which produced various parts, among which [redacted] engine rotors. This shop was not restricted and had no restricted sections.

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19. Shop No. 3 became a restricted shop in approximately 1954. Prior to 1954, it was a welding, machine, and boiler shop. [redacted]

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[redacted] It was rumored that it was still a welding shop [redacted]

half-molded and unmolded steel plate, steel pipes, and rings enter the shop. [redacted]

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20. Shop No. 4 was engaged in dieing and contained hydraulic, mechanical, and friction dieing machines. It was not a restricted shop and had no restricted section. In addition to producing parts for Plant 456, it filled orders from the Gorkiy Automobile Plant for parts such as rings. (See sketch No. 2 on page 21.)

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21. Shop No. 5 was a restricted shop [redacted] It was rumored that it was an assembly shop, [redacted]

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22. Shop No. 6 was a small shop outside the main plant complex, next to the carpentry shop. It was not restricted. Nothing was produced there, but instead it was more of a laboratory and contained a vibrating machine, a drilling machine, and metal-cutting machines.

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23. Shop No. 7 was a foundry and forge where ferrous and non-ferrous small metal parts were founded for the tools used at the plant. It was not a restricted shop [redacted]

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24. Shop No. 8 was a restricted shop. [redacted]

25. Shop No. 9 was not restricted and produced instruments and tools for the plant. The shop chief was an Aleks e vev(fnu) [redacted]

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26. Shop No. 10 was a machine shop which contained, for the most part, lathes, drilling machines, and milling machines. It was not restricted. [redacted] a Tarasov (fnu) was shop chief. Tarasov worked closely with Glushko and Vitko of the OKB and with Kolitsev, [redacted]

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27. Shop No. 11 was a manual welding and boiler shop. Tubes for frameworks (rama) were welded there and parts were buffed. (See sketch No. 3 of the framework on page 22 .) It was not restricted. A Semenov (fnu) was the shop chief, [redacted] he had the title of technologist. [redacted] spheres being checked in this shop by having water flow through them (see paragraph 16). 50X1-HUM
28. Shop No. 12 was a lathe shop where screws, joints, and washers were produced. The machinery was automatic. This shop was not restricted [redacted] 50X1-HUM
29. Shop No. 17 was the shop where all plant electrical elements were produced. [redacted] coiling work done on small motors there. [redacted] they were low potency motors. [redacted] This shop was not restricted [redacted] 50X1-HUM
30. The main precision and measuring laboratory was attached to Shop No. 9. The accuracy and measurements of precision tools and parts were tested there. It contained high-precision microscopes [redacted] 50X1-HUM
31. There was a restricted testing laboratory outside the main plant area in the area occupied by the airfield. [redacted] 50X1-HUM
32. There was another shop, number unknown, which became restricted in 1953. Prior to 1953 it had been a machine shop [redacted] 50X1-HUM
33. There was a small shop, number unknown, which made wooden casting molds and contained several small-capacity vertical furnaces. [redacted] Aluminum and steel rods called electrodes were used for welding. Ferrous and non-ferrous metals were founded there. 50X1-HUM
- Plant Production
34. Up to 1956 the plant worked on projects for combustion chambers, frames, rotors, and nozzles (for rocket engines?). Grain sprayers and dryers for agricultural use and occasionally iron beds were also manufactured. All projects had a number consisting of six or seven digits. Some were preceded by S2 and followed by several unrecalled numbers. [redacted] 50X1-HUM

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35. It was rumored that all plant work was aimed at improving the FAU-2. Work on Article 2 was already underway in 1950 and was still continuing in 1956. 15 to 20 of the Articles were produced per month. The OKB was responsible for Article 2. many changes were made on it. All Article 2's were tested in the plant test laboratory. two types of noises coming from the airfield which was surrounded by a high wooden fence. One was a loud continuous noise and the other was a loud, rising noise which ended abruptly. 50X1-HUM
36. Work on Article 1 began in 1952 or 1953. orders for parts for Article 1. were similar to Article 2 parts. the OKB was responsible for Article 1 since all the orders for it were received from the OKB. parts for the Article were modified and sometimes discarded. about 15 or 20 of these Articles were produced monthly. All Article 1's were tested at the plant in the same fashion as were the Article 2's. 50X1-HUM

37. 50X1-HUM

38.

Materials Used at the Plant

39. High and regular-quality ferrous and nonferrous metals were used at the plant in producing parts. Pieces were galvanized in Shop No. 11. 50X1-HUM
40. The plant received instrumental, rolled, round, square, and ordinary steel to be used for steel sections. It was difficult in the USSR to determine the origin of supply because the markings on the steel did not refer to the originating plant but to the quality of the steel. there was never a shortage of material. The largest steel sheet was approximately 1.50 x 2 meters. Its thickness ranged from one to five millimeters. These sheets were used in Shop No. 4. 50X1-HUM

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41. The aluminum sheets at the plant were approximately ten millimeters thick and 350 millimeters in length and width.

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42. The stainless steel pieces varied in thickness; the thickest was 15 millimeters and the thinnest, one-half millimeter. The thickest pieces were machined in the lathe and drilling machines, and the thinner ones were used for stamping, cutting, and forming.

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From the shops they went to the warehouse, and from there, to the assembly shops.

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43. steel articles with colored markings of blue, yellow, red, green, and white.

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44. 10, 12, 15 20, 30, and 50-millimeter steel and aluminum pipes at the plant

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some aluminum pipes which were approximately 15 to 20 millimeters thick and were cut in lengths of from approximately one to one and one-half meters. They were shaped as shown in sketch No. 4 on page 23 .

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45. 65G steel was a high-quality steel which became hard and resistant once it was tempered and drawn.

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the steel was good for saws.

46. KhGSA 25 was also a high-quality steel which, judging from its symbols, contained chrome and sulphur alloys.

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47. U-7, U-8, and U-10 hard steel were used in the manufacture of steering and instrument bushings because of the small amount worn away in friction. This steel contained carbon.

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48.

49. Fuels liquid oxygen was used at the plant. LOX generators were used

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near the airfield in the area occupied by the testing laboratory.

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50. LOX arrived at the plant in tank trucks. [redacted] the trucks contained LOX since there was a covering of frost around the safety valves. [redacted]

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51. Alcohol was used at the plant in large quantities. One of its uses was to clean parts. [redacted] It arrived at the plant in tank trucks. [redacted] trucks [redacted] had a capacity of about 20 cubic meters. [redacted]

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The main plant warehouse distributed it to the plant shops. [redacted] the rest of it was [redacted] probably stored at the testing laboratory since the trucks went there. [redacted]

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52. Kerosene was used at the plant to remove grease from machines and parts. [redacted]

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53. [redacted] The tank trucks were driven by civilian personnel and had civilian license plates [redacted]

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54. [redacted]

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Plant Security

55. [redacted] A special pass was required for entry into secret shops. [redacted]

56. [redacted] pass was of cardboard and was lined with a dark oilcloth. It consisted of two parts: one, containing the worker's name, photograph, several signatures, and a plant stamp in ink; and the other, the worker's Office, job and shift. [redacted] A new pass was issued only if the old one was in poor condition, and one did not have to submit a request for this new pass.

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57. The pass was valid only for one's own shift, and if a person had to work overtime or do night work, it was necessary to get written permission from his shop chief. [redacted] a worker losing his pass. Were this to happen, a person would have to notify his shop chief who would tell him how to go about getting another. 50X1-HUM
58. Upon entering the plant a worker would go to the guard tower, give his plant number, and receive his pass, after the guard had checked the photograph on the pass. The worker would leave by the same exit and hand in his pass. [redacted] 50X1-HUM
59. Guards were stationed at plant and secret shop entrances. Frequently guards knew workers by sight, and in these cases checks were not very strict. However if the guards did not know a worker well, the checks were very strict and the guards were known to ask questions on pass data before handing over the pass. It was not common for the guards to search workers, and this was done only if a worker was suspected of having taken something from the plant or if he carried a strange-looking package.
60. Guards were hired by the personnel section of the plant, [redacted] The majority of the guards started as guards with the object of later becoming plant workers. [redacted] guards who had become workers [redacted] were, for the most part, unqualified, they worked in very low-level jobs. 50X1-HUM
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Schools at Plant 456 and in Khimki

61. The plant had an apprentice school (shkola rabochoy molodezhi), under the auspices of the personnel section, for recently employed workers who had no specialty. The courses were exclusively for Plant 456 workers, and Plant 456 shop masters and technicians were the instructors. Any shop master with the professional capability could volunteer to be an instructor, and the instructors alternated. [redacted] 50X1-HUM
- [redacted] Classes were not held regularly, but only when new workers had to be trained. The course consisted of four hours of practical training and four hours of studies (per day?). [redacted] the course [redacted] did not last more than one year, unless a student had to repeat it. Theoretical instruction consisted of the elements of arithmetic and algebra, linear drawing, geometry, and a knowledge of cutting tools. There were groups for lathe operators, milling machine operators, fitters, planers, electricians, and welders. The number of students in each group depended on plant needs. [redacted] 50X1-HUM
- [redacted] The majority were Russian (sic) boys who had completed their military duty and had no specialty.

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62. There was a night school tekhnikum which was subordinate to the Ministry of Education and under the Khimkinskiy rayon, in front of Plant 456's club and near the Moscow River. The school was for technologists in general and consisted of ten grades. It prepared the students for work in machine, automobile, aviation, and machine tool plants.

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Since it was a rayon technical school, workers from many plants attended

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possibly Plant 456 personnel taught at the school

Many Plant 456 workers voluntarily attended the school. After completing the ten classes some students went on to study at institutes in Moscow. There were no institutes in Khimki. As of September 1956 this school had been enlarged and improved.

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the subjects taught in the school were mathematics, chemistry, physics, technology of materials, linear drawing, tool machines, material resistance, electronics, and cutting and measuring instruments.

63.

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Projects

64.

(See sketch No. 5 of the tool on page 24 .)

the mold for it was made in two parts in Shop No. 4 and was welded in Shop No. 11.

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65.

drawing of a cylinder (see sketch No. 6 on page 25) which was being produced in 1953, and was instructed to make a general plan for a drilling tool to be used in its manufacture. The tool was to drill holes in the cylinder.

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tool was to be installed in Shop No. 2.

66.

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[redacted] The title block on these copies contained the name of the part and the number [redacted]

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[redacted] It contained no technical characteristics. The original drawings were kept in the OKB archives [redacted]

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The original drawings could be obtained through the archives of the tool planning office without signing for them, but they had to be returned before leaving work.

67.

[redacted] three copies of the plans for the tool for each one. One copy was for the shop which was to produce the tool; one, for the shop which was to use the tool; and one, for the archives of the tool planning office.

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[redacted] No special tools had to be designed to carry out these projects. [redacted]

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68.

The chief of the tool planning office signed and approved the drawings [redacted]

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Miscellaneous

69.

[redacted] no such work was being done in the tooling section. [redacted] the plant was associated with an institute,

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70.

[redacted] there were Aviation Plants 293 and 301 in Khimki, but did not know what type of work they did. Soccer teams from the plants often had games with the Plant 456 team. [redacted]

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71.

Plant 456 was moved to an unknown location in Central Asia during World War II.

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72.

Ministry of

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Aviation personnel visited the plant.

73.

74.

75. The Khimki Airfield was used as a soccer field by plant employees. It contained two small airplanes used by DOSAAF for training purposes.

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1.

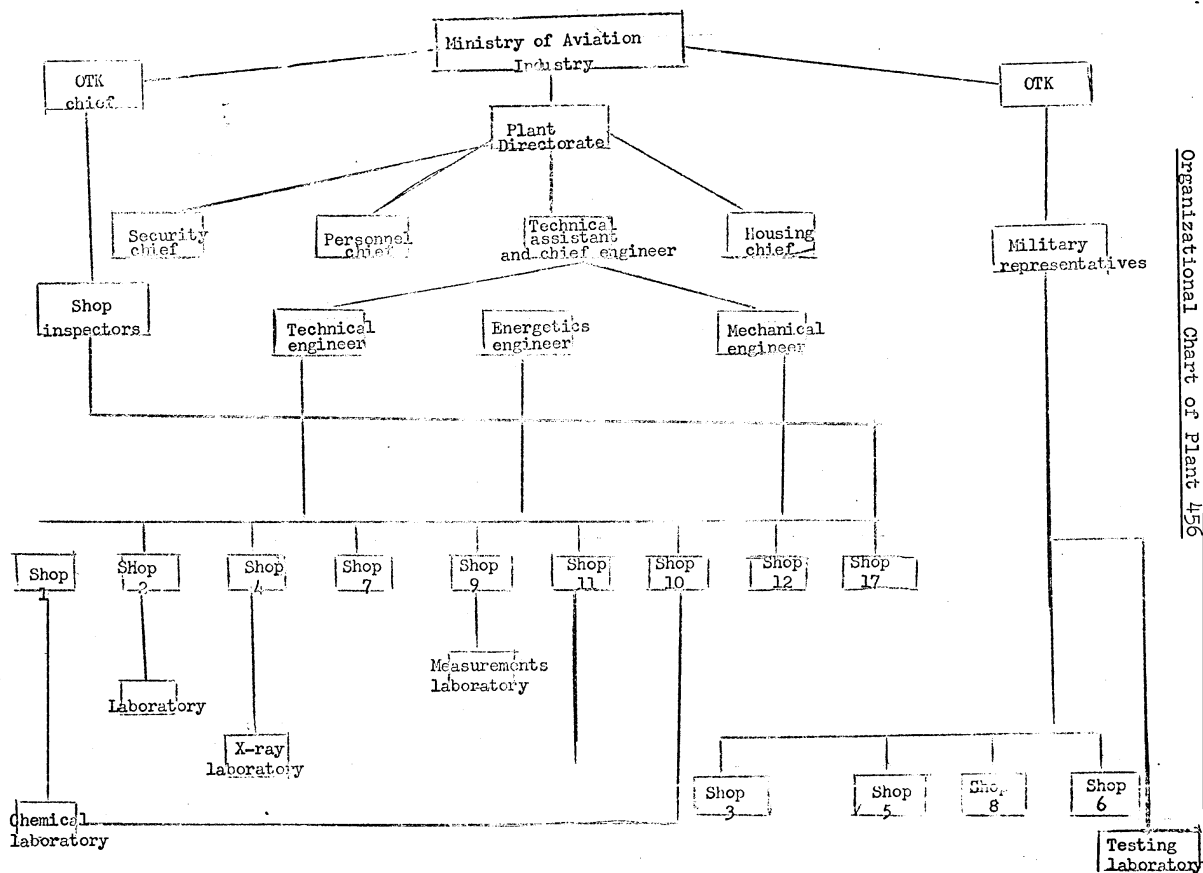
Comment:

Karan of the OGT was assistant to the chief technological engineer (paragraph 1d and 4a), the chief technological engineer was in charge of the two groups which made up the technological office (paragraph 3), and Sergev Aeriskov of the OGT was a draftsman in the tool planning section (paragraph 4f). Thus it would seem probable that both the OGT and the technological office were directly subordinate to the chief technological engineer and that the tool planning section was in some way subordinate to the OGT.

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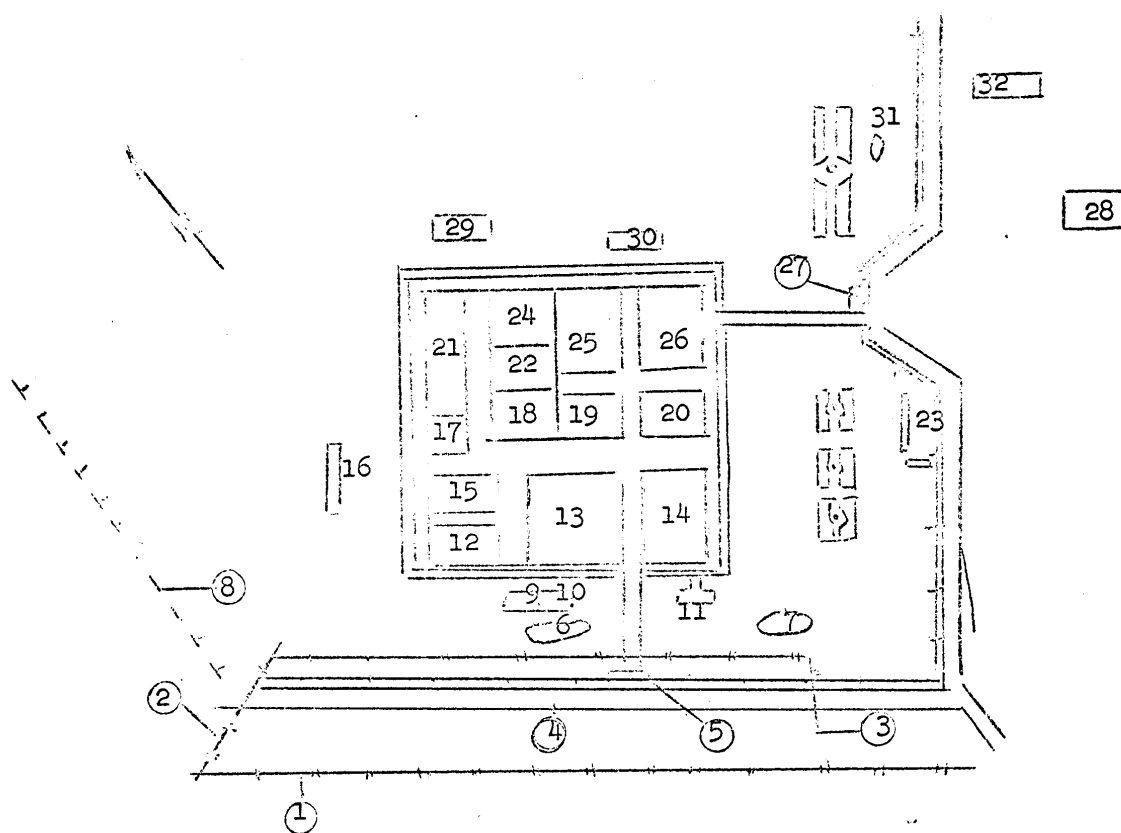


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Layout of Plant 456



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Legend to Layout of Plant 456

1. Moscow-Leningrad railroad line.
2. Spur line to plant.
3. Spur line to plant.
4. Highway.
5. Plant entry control.
6. Open air coal storage.
7. Open air wood storage area.
8. Wood fence.
9. Shop No. 6.
10. Carpentry shop.
11. Heating works.
12. Shop No. 4.
13. Restricted shop, number unknown.
14. Restricted shop, number unknown.
15. Shop No. 11.
16. Warehouses.
17. Shop No. 3.
18. Shop No. 10.
19. Shop No. 1.
20. Shop No. 2.
21. Shop No. 5.
22. Shop No. 12.
23. Garage.
24. Shop No. 17.
25. Shop No. 8.
26. Shop No. 9.
27. Plant entry control.
28. Personnel section.
29. OKB.
30. Shop No. 7.
31. Pool.
32. Firehouse.

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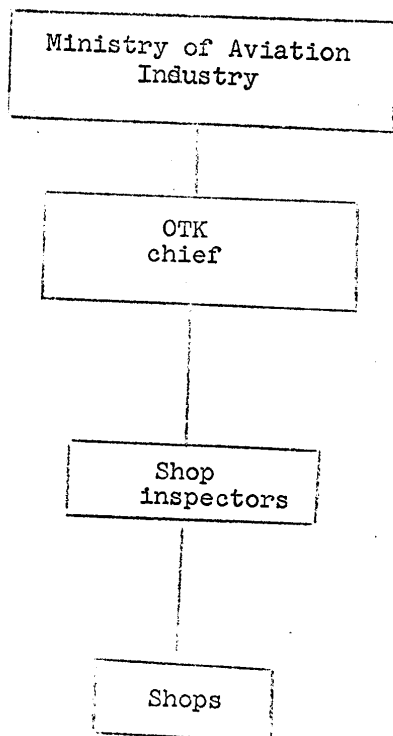
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OTK Organizational Chart



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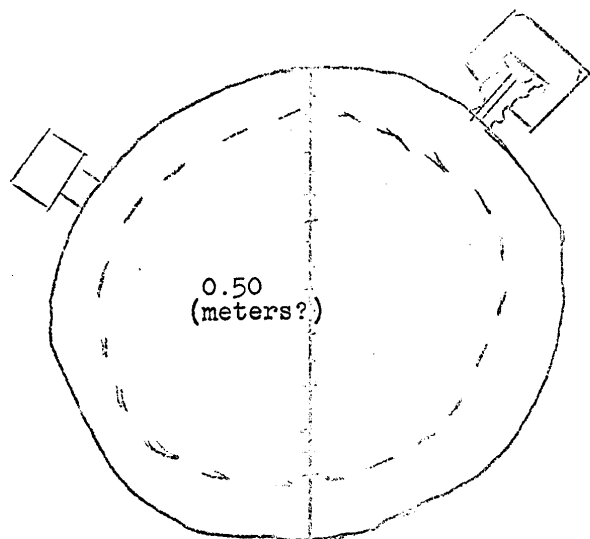
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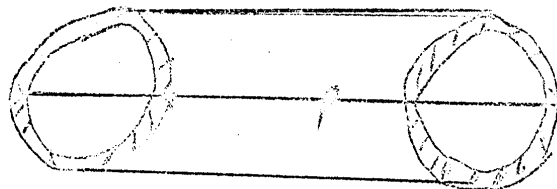
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Sketch No. 1 of Sphere Produced at Plant 456



Sketch No. 2 of Part Produced for Gorkiy Automobile Plant



C-O-N-F-I-D-E-N-T-I-A-L

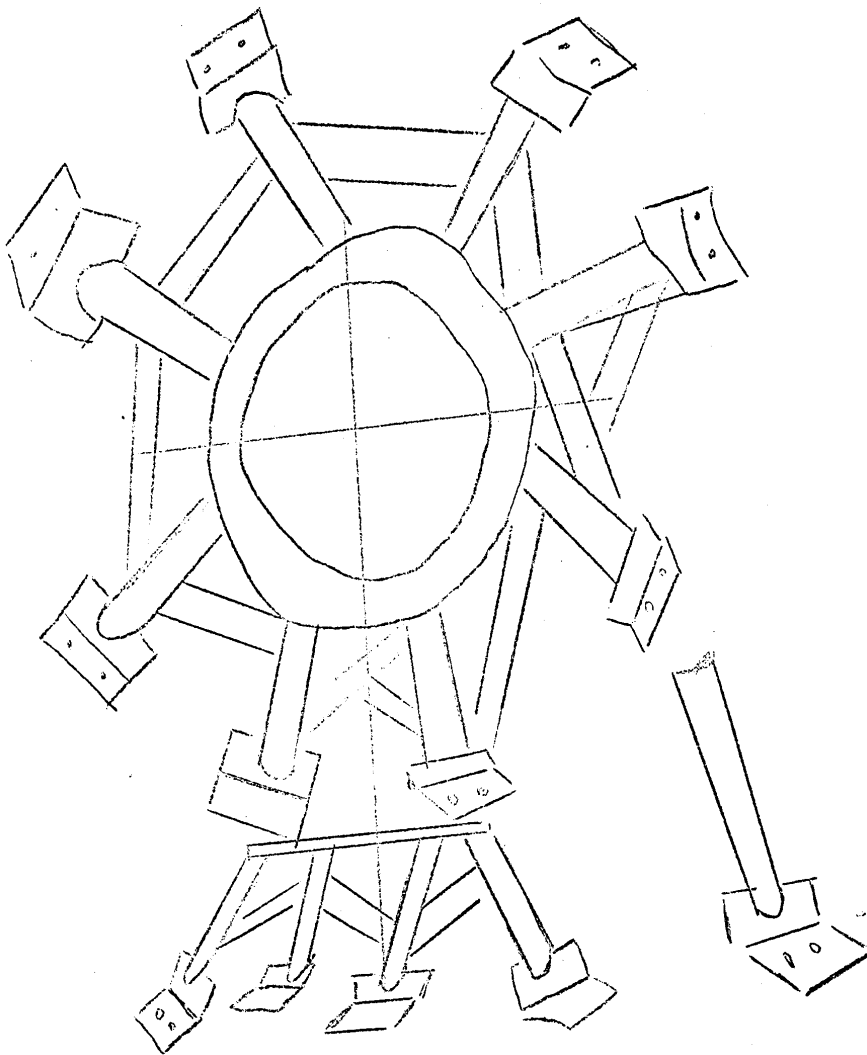
50X1-HUM

C-O-N-F-I-D-E-N-T-I-A-L

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-22-

Sketch No. 3 of a Framework Produced at Plant 456



C-O-N-F-I-D-E-N-T-I-A-L

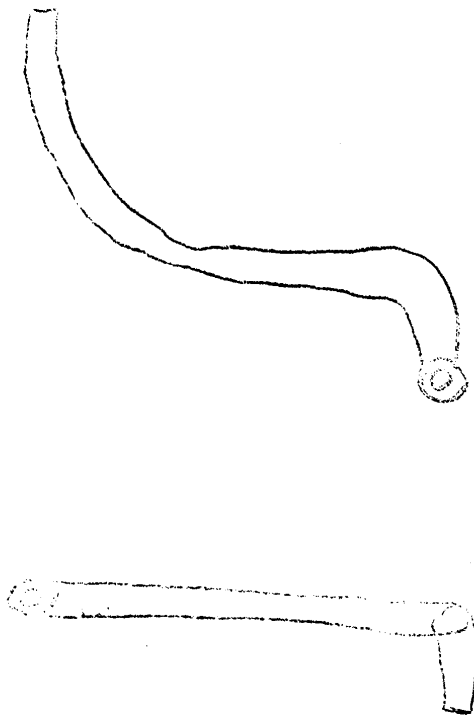
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C-O-N-F-I-D-E-N-T-I-A-L

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-23-

Sketch No. 4 of Pipes Used at Plant 456



C-O-N-F-I-D-E-N-T-I-A-L

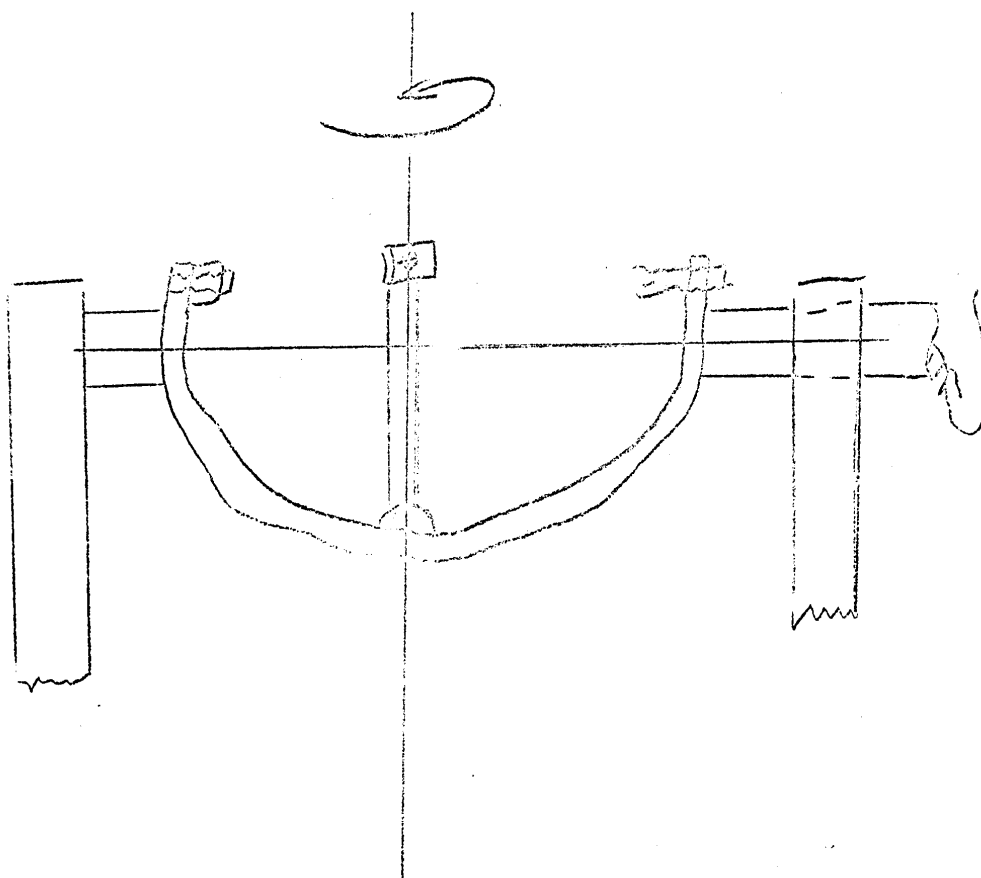
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C-O-N-F-I-D-E-N-T-I-A-L

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-24-

Sketch 5 of a Tool Designed at Plant 456



C-O-N-F-I-D-E-N-T-I-A-L

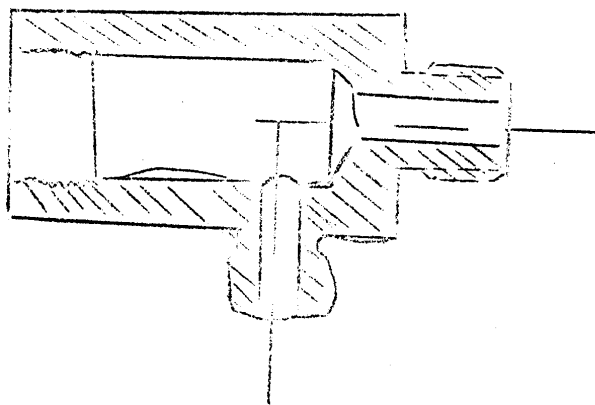
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C-O-N-F-I-D-E-N-T-I-A-L

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Sketch No. 6 of a Part Designed at Plant 456



C-O-N-F-I-D-E-N-T-I-A-L

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C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

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PLANT 456

Plant Administration

1. The administration for Plant 456 consisted of a director, an assistant, a technical engineer, a mechanical engineer, and an energetics engineer. (See the plant organizational chart on page 17 and the plant layout on page 18.) The following personnel filled these positions:

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- a. Grishin (fnu), who was director of the plant until the end of 1950 or the beginning of 1951.

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- b. Kolutsev (fnu), who replaced Grishin and was director of the plant until the beginning of 1956.

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- c. Mushishkov (fnu), who was assistant to the director

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- d. Yakov Abramovich Shifrin, who was the chief technological engineer.

2. Khrenov (fnu) was chief of the personnel department of the plant until the end of 1950, when he was replaced by Aleksanarov (fnu)

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C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

-3-

Technological Office

3. The technological office¹ consisted of two groups: the design group and the technology group. The chief technological engineer was in charge of the two groups. The following personnel worked in the technological office:

a. Vadryakov (fnu), a draftsman with no title.

50X1-HUM

b. Derman (fnu), a draftsman

c. Avdeyev (fnu), an apprentice draftsman.

d. Takhuel (fnu), a draftswoman

e. Agriskov (fnu), an experienced draftsman

OGT

4. The following personnel worked in the OGT (Department of the Chief Technologist):¹

a. Karan (fnu), assistant to the chief technological engineer.

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b. Gorev (fnu), who first worked as a designer and later became chief of the OGT.

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C-O-N-F-I-D-E-N-T-I-A-L

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50X1-HUM

C-O-N-F-I-D-E-N-T-I-A-L

-4-

- c. Nadya (fnu), who was a secretary who distributed the work.

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- d. Khavenson (fnu), a draftsman of cutting instruments with the title of engineer. specialty unknown.

50X1-HUM

- e. Margulis (fnu), a draftsman with the title of engineer, specialty unknown.

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- f. Sergey Agriskov, a competent draftsman.

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- g. Borovikov (fnu), a draftsman.

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Tool Planning Section and OKB

5. The tool planning section 1. and the OKB drew up plant projects. There was also a machine planning section, but it's work was very elementary and was limited only to making drawings of broken gears or other machinery parts so that they could be repaired at once. The tool planning section made all the plans for the tools used at the plant and was divided into three groups: the tool, tooling, and dieing groups, of which the tooling group was the largest.

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C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

-5-

6. The tool planning section received drawings of parts from the OKB and then drew up the tooling projects for them. The problems were resolved by the chief of the tool planning section and the OKB. Personnel of the tool planning section were denied entrance to the OKB offices, and thus if any problems arose, someone from the OKB had to go to the tool planning section to discuss it. There were no restrictions on relationships between personnel of the OKB and the tool planning section.

7. The mission of the OKB was to direct and test all plant designs.

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- a. Glushko (fnu), who was chief of the OKB

- b. List (fnu), who was chief of an unknown design section.

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C-O-N-F-I-D-E-N-T-I-A-L

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C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

-6-

ATTACHMENT 10

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c. Vitko (fnu), who was chief of a design group.

OTK

8. The OTK was [redacted] probably [redacted] established when the plant first went into operation. Its function in Plant 456 was the same as that in any other Soviet plant, i.e. to inspect production. It was very strict, and had no relationship either with the scheduling of plant production or with the OKB. OTK members were not allowed free entry to OKB offices, but, as in the case of other plant personnel, had to have special passes. (See the diagram of the organizational structure of the OTK on page 20.) 50X1-HUM
9. The OTK chief was in charge of all shop inspection teams. [redacted] 50X1-HUM
10. The OTK chief and the inspection teams were not subordinate to the plant director, and thus had complete freedom to accept or refuse a plant part or article. Refusal did not occur frequently, since the item was manufactured after the plans had been approved. Every shop had an inspection chief aided by four or five assistants.
11. There were military representatives in the OTK who belonged to the infantry, artillery, and air force, and the majority of them were officers. Military personnel had priority over the shop OTK inspectors, and their decisions or suggestions had to be accepted. [redacted] 50X1-HUM
12. [redacted] many plant fitters [redacted] later became inspectors and [redacted] were very efficient. Personnel changes in the OTK were not frequent. [redacted] 50X1-HUM

C-O-N-F-I-D-E-N-T-I-A-L

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C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

-7-

ATTACHMENT

13. The OTK checked about ten per cent of the common parts such as caps, screws, and washers, and all of the precision parts. The acceptance standards were almost the same for all projects.

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If the technological aspects of a project changed, the acceptance standards would also change.

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14. The shop inspectors used a triangular-shaped stamp containing the inscription OTK and the shop number. If the part being checked was fragile or a high-precision part, a dark blue ink stamp was used. Some parts were checked more than once. This double check was conducted only to make sure that a particular part was completed, and if there was any doubt, it was tested in the main testing and measurements laboratory.

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50X1-HUM

15. The military inspectors put a stamp or ink stamp on all parts. The type of stamp used depended on the part being inspected, and the stamps were similar to those used by the shop inspectors.

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16. two types of testing equipment used by the OTK. One was a machine for testing vibration, in Shop No. 6, and the other was for testing humidity and pressure, in Shop No. 11. The equipment for testing vibration consisted of a table which was about 50 centimeters long and was equipped with an electric motor which rotated eccentrically. The capacity of this motor limited its use to only small parts. The equipment for testing humidity and pressure consisted of a compressor and a rubber hose which conducted water to the part being tested. only spheres (shar) being tested with this equipment (see sketch No. 1 on page 21). The purpose of the check was to test the welding. On one occasion a sphere break during testing. The breakage was due not to faulty welding but to the fact that material with insufficient resistance had been used.

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50X1-HUM

50X1-HUM

50X1-HUM

50X1-HUM

Shops

17. Shop No. 1 was dedicated to painting and galvanizing parts. Aluminum and steel parts were painted with black enamel; and aluminum, steel, and ferrous metals were galvanized with chrome and nickel. some parts could not be galvanized with "boronich" (sic) because they would rust; This shop was not restricted, and one could enter freely. The shop chief was a Russian (sic)

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50X1-HUM

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C-O-N-F-I-D-E-N-T-I-A-L

-8-

woman, name unknown, and the majority of the workers were women.

18. Shop No. 2 was a machine shop which produced various parts, among which [redacted] engine rotors. This shop was not restricted and had no restricted sections. 50X1-HUM
19. Shop No. 3 became a restricted shop in approximately 1954. Prior to 1954, it was a welding, machine, and boiler shop. [redacted] It was rumored that it was still a welding shop [redacted] half-molded and unmolded steel plate, steel pipes, and rings enter the shop. [redacted] 50X1-HUM
20. Shop No. 4 was engaged in dieing and contained hydraulic, mechanical, and friction dieing machines. It was not a restricted shop and had no restricted section. In addition to producing parts for Plant 456, it filled orders from the Gorkiy Automobile Plant for parts such as rings. (See sketch No. 2 on page 21.) [redacted] 50X1-HUM
21. Shop No. 5 was a restricted shop [redacted] It was rumored that it was an assembly shop, [redacted] 50X1-HUM
22. Shop No. 6 was a small shop outside the main plant complex, next to the carpentry shop. It was not restricted. Nothing was produced there, but instead it was more of a laboratory and contained a vibrating machine, a drilling machine, and metal-cutting machines. [redacted] 50X1-HUM
23. Shop No. 7 was a foundry and forge where ferrous and non-ferrous small metal parts were founded for the tools used at the plant. It was not a restricted shop, [redacted] 50X1-HUM
24. Shop No. 8 was a restricted shop [redacted]
25. Shop No. 9 was not restricted and produced instruments and tools for the plant. The shop chief was an Alekseyev(fnu) [redacted] 50X1-HUM
26. Shop No. 10 was a machine shop which contained, for the most part, lathes, drilling machines, and milling machines. It was not restricted. [redacted] a Tarasov (fnu) was shop chief. Tarasov worked closely with Glushko and Vitko of the OKB and with Kolitsev. [redacted] 50X1-HUM

C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

50X1-HUM

C-O-N-F-I-D-E-N-T-I-A-L

-9-

27. Shop No. 11 was a manual welding and boiler shop. Tubes for frameworks (rama) were welded there and parts were buffed. (See sketch No. 3 of the framework on page 22 .) It was not restricted. A Semenov (fnu) was the shop chief. [redacted] he had the title of technologist. [redacted] spheres being checked in this shop by having water flow through them (see paragraph 16). 50X1-HUM
28. Shop No. 12 was a lathe shop where screws, joints, and washers were produced. The machinery was automatic. This shop was not restricted. [redacted] 50X1-HUM
29. Shop No. 17 was the shop where all plant electrical elements were produced. [redacted] coiling work done on small motors there. [redacted] they were low potency motors. [redacted] This shop was not restricted. [redacted] 50X1-HUM
30. The main precision and measuring laboratory was attached to Shop No. 9. The accuracy and measurements of precision tools and parts were tested there. It contained high-precision microscopes [redacted], measuring instruments to check parts, and other unidentified precision and measuring instruments. [redacted] 50X1-HUM
50X1-HUM
50X1-HUM
31. There was a restricted testing laboratory outside the main plant area in the area occupied by the airfield. [redacted] 50X1-HUM
32. There was another shop, number unknown, which became restricted in 1953. Prior to 1953 it had been a machine shop [redacted] 50X1-HUM
33. There was a small shop, number unknown, which made wooden casting molds and contained several small-capacity vertical furnaces. [redacted] Aluminum and steel rods called electrodes were used for welding. Ferrous and non-ferrous metals were founded there. 50X1-HUM

Plant Production

34. Up to 1956 the plant worked on projects for combustion chambers, frames, rotors, and nozzles (for rocket engines?). Grain sprayers and dryers for agricultural use and occasionally iron beds were also manufactured. All projects had a number consisting of six or seven digits. Some were preceded by S2 and followed by several [redacted] numbers. [redacted] 50X1-HUM

C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

C-O-N-F-I-D-E-N-T-I-A-L

-10-

50X1-HUM

35. It was rumored that all plant work was aimed at improving the FAU-2. Work on Article 2 was already underway in 1950 and was still continuing [redacted] 50X1-HUM
[redacted] 15 to 20 of the Articles were produced per month. The OKB was responsible for Article 2. [redacted] 50X1-HUM
[redacted] many changes were made on it. All Article 2's were tested in the plant test laboratory. [redacted] 50X1-HUM
[redacted] two types of noises coming from the airfield which was surrounded by a high wooden fence. One was a loud continuous noise and the other was a loud, rising noise which ended abruptly.
36. Work on Article 1 began in 1952 or 1953 and was still continuing [redacted] 50X1-HUM
[redacted] parts for Article 1 [redacted] were similar to Article 2 parts. [redacted] the OKB was responsible for Article 1 since all the orders for it [redacted] 50X1-HUM
[redacted] were received from the OKB. [redacted]
[redacted] parts for the Article were modified and sometimes discarded. [redacted] 50X1-HUM
[redacted] about 15 or 20 of these Articles were produced monthly. All Article 1's were tested at the plant in the same fashion as were the Article 2's.

37. [redacted] 50X1-HUM

38. [redacted]

Materials Used at the Plant

39. High and regular-quality ferrous and nonferrous metals were used at the plant in producing parts. Pieces were galvanized in Shop No. 11. [redacted] 50X1-HUM
[redacted]
40. The plant received instrumental, rolled, round, square, and ordinary steel to be used for steel sections. [redacted] 50X1-HUM
It was difficult in the USSR to determine the origin of supply because the markings on the steel did not refer to the originating plant but to the quality of the steel. [redacted] 50X1-HUM
[redacted] there was never a shortage of material. The largest steel sheet was approximately 1.50 x 2 meters. Its thickness ranged from one to five millimeters. These sheets were used in Shop No. 4.

C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

-11-

ATTACHMENT

41. The aluminum sheets at the plant were approximately ten millimeters thick and 350 millimeters in length and width. [REDACTED] 50X1-HUM
42. The stainless steel pieces varied in thickness; the thickest [REDACTED] was 15 millimeters and the thinnest, one-half millimeter. The thickest pieces were machined in the lathe and drilling machines, and the thinner ones were used for stamping, cutting, and forming. [REDACTED] 50X1-HUM
[REDACTED] From the 50X1-HUM
shops they went to the warehouse, and from there, to the assembly shops. [REDACTED] 50X1-HUM
43. [REDACTED] steel articles with colored markings of blue, yellow, red, green, and white. [REDACTED] 50X1-HUM
44. [REDACTED] 10, 12, 15 20, 30, and 50-millimeter steel and aluminum pipes at the plant [REDACTED] 50X1-HUM
[REDACTED] some aluminum pipes which were approximately 15 to 20 millimeters thick and were cut in lengths of from approximately one to one and one-half meters. They were shaped as shown in sketch No. 4 on page 23 . 50X1-HUM
45. [REDACTED] 65G steel [REDACTED] 50X1-HUM
was a high-quality steel which became hard and resistant once it was tempered and drawn. [REDACTED] 50X1-HUM
[REDACTED] the steel was good for saws. [REDACTED]
46. [REDACTED] KhGSA 25 [REDACTED] 50X1-HUM
was also a high-quality steel which, judging from its symbols, contained chrome and sulphur alloys. [REDACTED]
47. [REDACTED] U-7, U-8, and U-10 hard steel were used in the manufacture of steering and instrument bushings because of the small amount worn away in friction. This steel contained carbon. [REDACTED] 50X1-HUM
48. [REDACTED]
49. Fuels [REDACTED] liquid oxygen was used at the plant. 50X1-HUM
[REDACTED] LOX generators were used [REDACTED]
[REDACTED] near the airfield in the area occupied by the testing laboratory. [REDACTED] 50X1-HUM
[REDACTED]

C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

-12-

ATTACHMENT

50. LOX arrived at the plant in tank trucks. [redacted] the trucks contained LOX since there was a covering of frost around the safety valves. [redacted]
[redacted]
[redacted] 50X1-HUM
51. Alcohol was used at the plant in large quantities. One of its uses was to clean parts. [redacted] It arrived at the plant in tank trucks. [redacted] trucks [redacted] had a capacity of about 20 cubic meters. [redacted]
The main plant warehouse distributed it to the plant shops [redacted] it was probably stored at the testing laboratory since the trucks went there. [redacted]
[redacted] 50X1-HUM
52. Kerosene was used at the plant to remove grease from machines and parts. [redacted] 50X1-HUM
53. [redacted]
The tank trucks were driven by civilian personnel and had civilian license plates [redacted] 50X1-HUM
54. [redacted]
Plant Security 50X1-HUM
55. [redacted]
[redacted] A special pass was required for entry into secret shops [redacted]
[redacted]
56. [redacted] pass was of cardboard and was lined with a dark oilcloth. It consisted of two parts: one, containing the worker's name, photograph, several signatures, and a plant stamp in ink; and the other, the worker's Office, job and shift. [redacted]
A new pass was issued only if the old one was in poor condition, and one did not have to submit a request for this new pass. 50X1-HUM

C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

-13-

ATTACHMENT

57. The pass was valid only for one's own shift, and if a person had to work overtime or do night work, it was necessary to get written permission from his shop chief. [redacted] no case of a worker losing his pass. Were this to happen, a person would have to notify his shop chief who would tell him how to go about getting another. 50X1-HUM
58. Upon entering the plant a worker would go to the guard tower, give his plant number, and receive his pass, after the guard had checked the photograph on the pass. The worker would leave by the same exit and hand in his pass. [redacted] 50X1-HUM
59. Guards were stationed at plant and secret shop entrances. Frequently guards knew workers by sight, and in these cases checks were not very strict. However if the guards did not know a worker well, the checks were very strict and the guards were known to ask questions on pass data before handing over the pass. It was not common for the guards to search workers, and this was done only if a worker was suspected of having taken something from the plant or if he carried a strange-looking package.
60. Guards were hired by the personnel section of the plant, [redacted] 50X1-HUM
[redacted] The majority of the guards started as guards with the object of later becoming plant workers. [redacted] guards who had become workers, but, since they were, for the most part, unqualified, they worked in very low-level jobs. 50X1-HUM
- Schools at Plant 456 and in Khimki
61. The plant had an apprentice school (shkola rabochoy molodezhi), under the auspices of the personnel section, for recently employed workers who had no specialty. The courses were exclusively for Plant 456 workers, and Plant 456 shop masters and technicians were the instructors. Any shop master with the professional capability could volunteer to be an instructor, and the instructors alternated. [redacted] 50X1-HUM
- [redacted] Classes were not held regularly, but only when new workers had to be trained. The course consisted of four hours of practical training and four hours of studies (per day?). [redacted] 50X1-HUM
- [redacted] it did not last more than one year, unless a student had to repeat it. Theoretical instruction consisted of the elements of arithmetic and algebra, linear drawing, geometry, and a knowledge of cutting tools. There were groups for lathe operators, milling machine operators, fitters, planers, electricians, and welders. The number of students in each group depended on plant needs. [redacted] 50X1-HUM
- [redacted] the students [redacted] were new at the plant. The majority were Russian (sic) boys who had completed their military duty and had no specialty. 50X1-HUM

C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

-14-

62. There was a night school tekhnikum which was subordinate to the Ministry of Education and under the Khimkinskiy rayon, in front of Plant 456's club and near the Moscow River. The school was for technologists in general and consisted of ten grades. It prepared the students for work in machine, automobile, aviation, and machine tool plants.

50X1-HUM

Since it was a rayon technical school, workers from many plants attended

50X1-HUM

Plant 456 personnel taught at the school

Many Plant 456 workers voluntarily attended the school. After completing the ten classes some students went on to study at institutes in Moscow. There were no institutes in Khimki. As of September 1956 this school had been enlarged and improved

50X1-HUM

the subjects taught in the school were mathematics, chemistry, physics, technology of materials, linear drawing, tool machines, material resistance, electronics, and cutting and measuring instruments.

63.

50X1-HUM

Projects

64.

50X1-HUM

tool for painting the inside of a sphere as shown in sketch No. 2 on page 21, was being produced in 1951 and 1952. (See sketch No. 5 of the tool on page 24 .)

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the mold for it was made in two parts in Shop No. 4 and was welded in Shop No. 11.

50X1-HUM

65.

a cylinder (see sketch No. 6 on page 25) was being produced in 1953

50X1-HUM

a drilling tool to be used The tool was to drill holes in the cylinder.

tool was to be installed in Shop No. 2.

66.

C-O-N-F-I-D-E-N-T-I-A-L

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50X1-HUM

C-O-N-F-I-D-E-N-T-I-A-L

-15-

ATTACHMENT

[redacted] The title block on these copies contained the name of the part and the number [redacted] It contained no technical characteristics. The original drawings were kept in the OKB archives. [redacted] The original drawings could be obtained through the archives of the tool planning office without signing for them, but they had to be returned before leaving work.

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50X1-HUM

50X1-HUM

50X1-HUM

67. [redacted] three copies of the plans for the tool for each one. One copy was for the shop which was to produce the tool; one, for the shop which was to use the tool; and one, for the archives of the tool planning office.

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[redacted] No special tools had to be designed to carry out these projects. [redacted]

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50X1-HUM

68. The chief of the tool planning office signed and approved the drawings [redacted]

50X1-HUM

Miscellaneous

69. [redacted] Plant 456 [redacted] was associated with an institute.

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70. [redacted] there were Aviation Plants 293 and 301 in Khimki. [redacted] Soccer teams from the plants often had games with the Plant 456 team. [redacted]

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50X1-HUM

71.

Plant 456 was moved to an unknown location in Central Asia during World War II.

C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

-16- ATTACHMENT

72. [redacted] Ministry of
Aviation personnel visited the plant. [redacted]

73.

74.

75. The Khimki Airfield was used as a soccer field by plant employees. It contained two small airplanes used by DOSAAF for training purposes. [redacted]

50X1-HUM

1. Comment: [redacted]

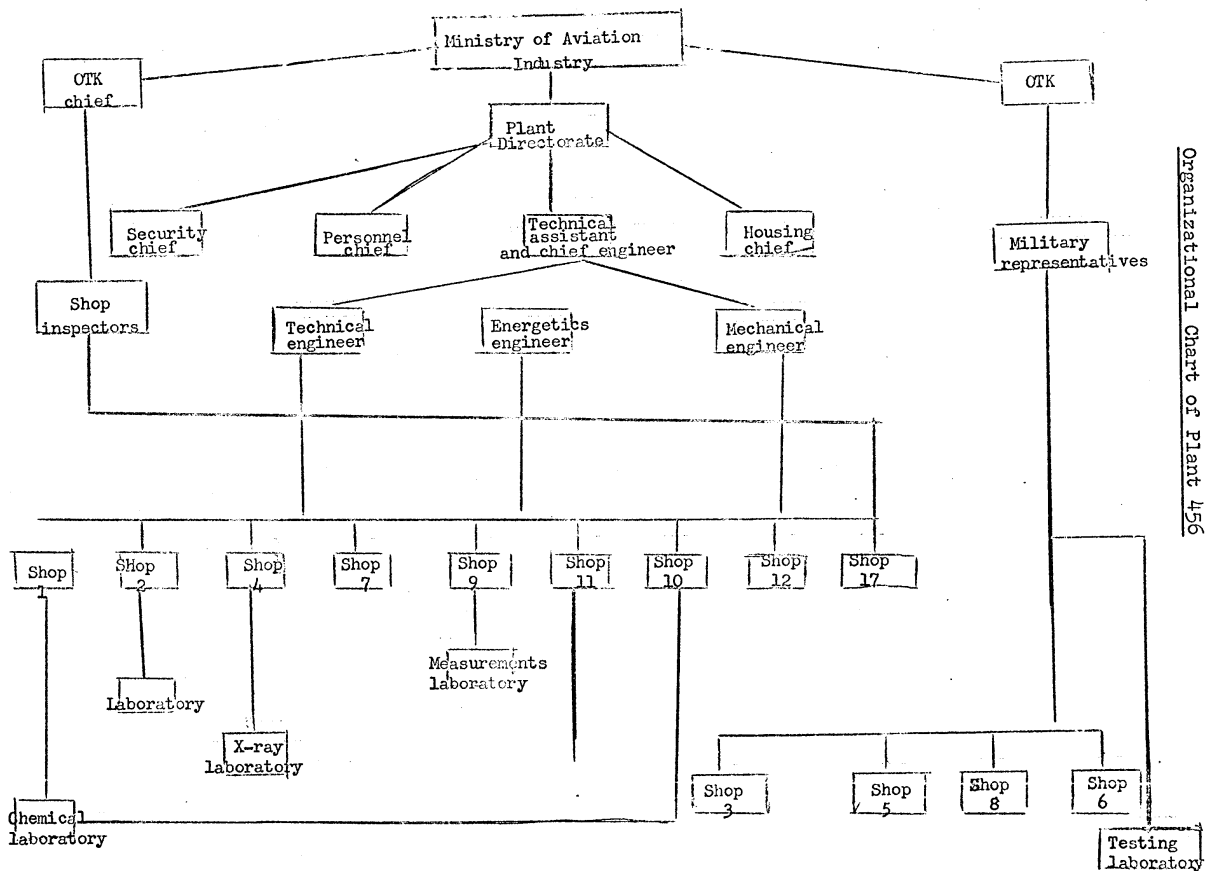
[redacted] Karan of the OGT was assistant to the chief technological engineer (paragraph 1d and 4a), [redacted] the chief technological engineer was in charge of the two groups which made up the technological office (paragraph 3), and [redacted] Sergey Agriskov of the OGT was a draftsman in [redacted] the tool planning section (paragraph 4f). Thus it would seem probable that both the OGT and the technological office were directly subordinate to the chief technological engineer and that the tool planning section was in some way subordinate to the OGT.

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50X1-HUM

C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM



C-O-N-F-I-D-E-N-T-I-A-L

-17-

ATTACHMENT

C-O-N-F-I-D-E-N-T-I-A-L

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50X1-HUM

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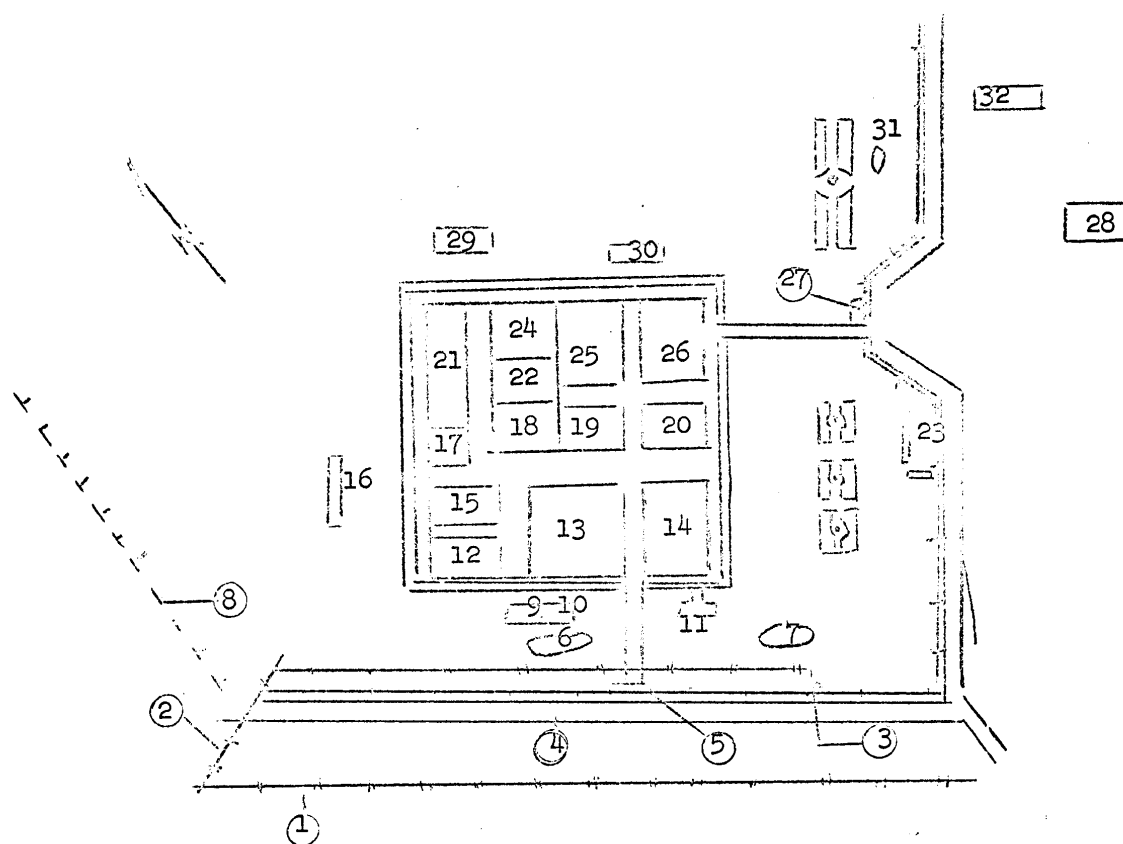
C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

-18-

ATTACHMENT

Layout of Plant 456



C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

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ATTACHMENT

Legend to Layout of Plant 456

1. Mosocw-Leningrad railroad line.
2. Spur line to plant.
3. Spur line to plant.
4. Highway.
5. Plant entry control.
6. Open air coal storage.
7. Open air wood storage area.
8. Wood fence.
9. Shop No. 6.
10. Carpentry shop.
11. Heating works.
12. Shop No. 4.
13. Restricted shop, number unknown.
14. Restricted shop, number unknown.
15. Shop No. 11.
16. Warehouses.
17. Shop No. 3.
18. Shop No. 10.
19. Shop No. 1.
20. Shop No. 2.
21. Shop No. 5.
22. Shop No. 12.
23. Garage.
24. Shop No. 17.
25. Shop No. 8.
26. Shop No. 9.
27. Plant entry control.
28. Personnel section.
29. OKB.
30. Shop No. 7.
31. Pool.
32. Firehouse.

C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

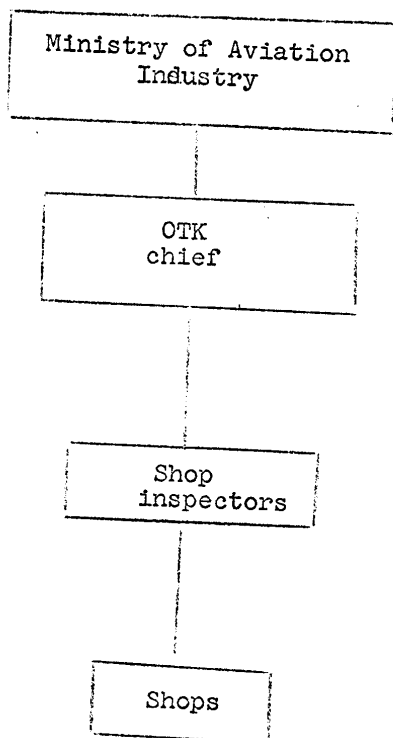
C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

-20-

50X1-HUM

OTK Organizational Chart



C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

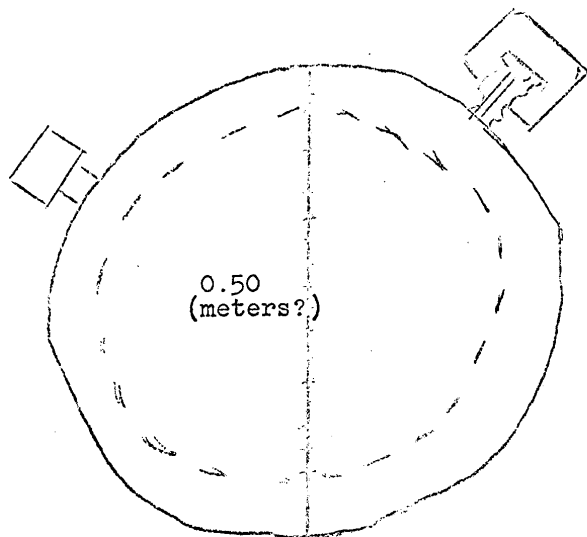
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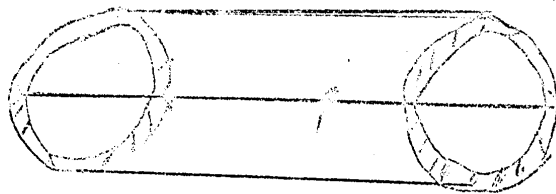
-21-

ATTACHMENT

Sketch No. 1 of Sphere Produced at Plant 456



Sketch No. 2 of Part Produced for Gorkiy Automobile Plant



C-O-N-F-I-D-E-N-T-I-A-L

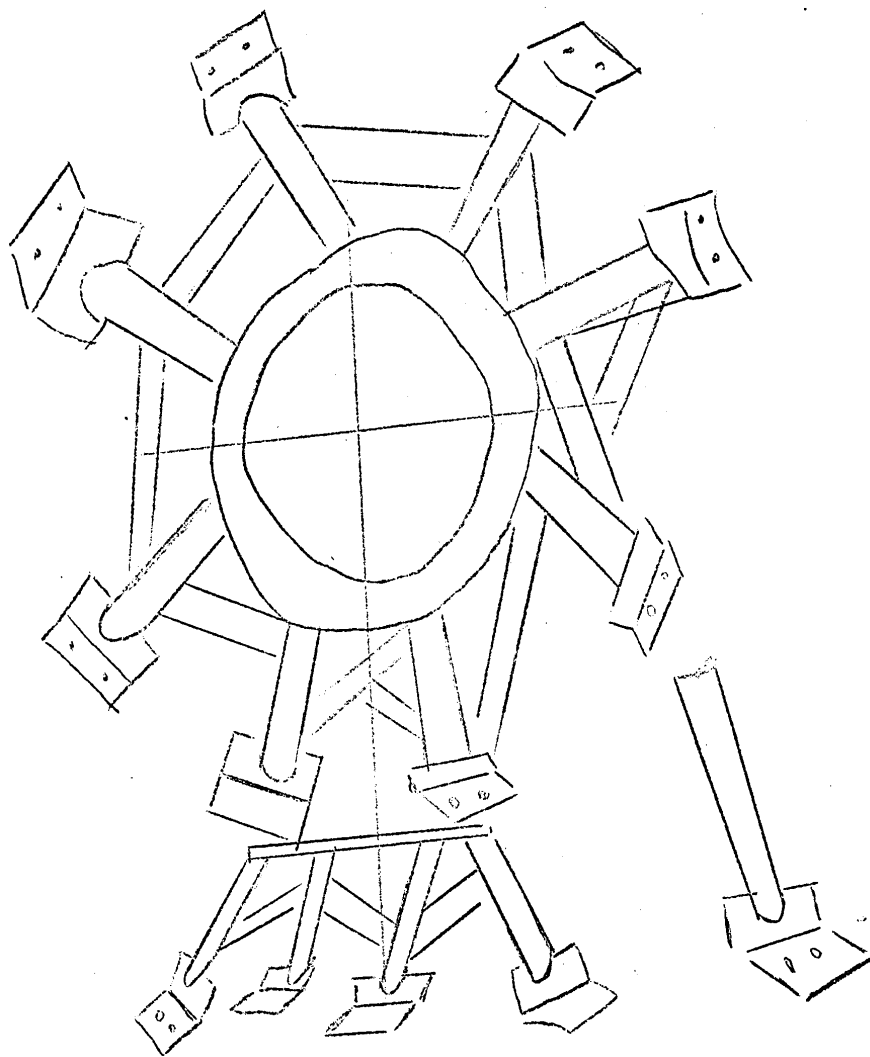
50X1-HUM

C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

-22-

Sketch No. 3 of a Framework Produced at Plant 456



C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

C-O-N-F-I-D-E-N-T-I-A-L



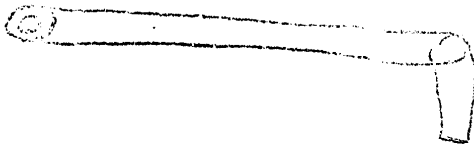
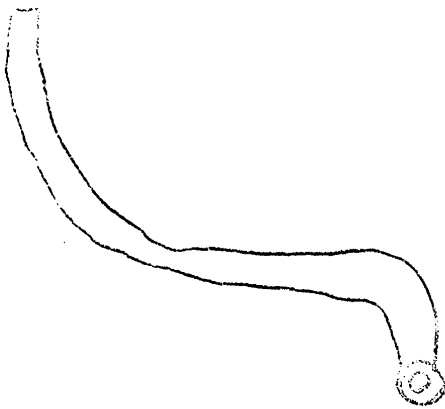
50X1-HUM

-23-



50X1-HUM

Sketch No. 4 of Pipes Used at Plant 456



C-O-N-F-I-D-E-N-T-I-A-L



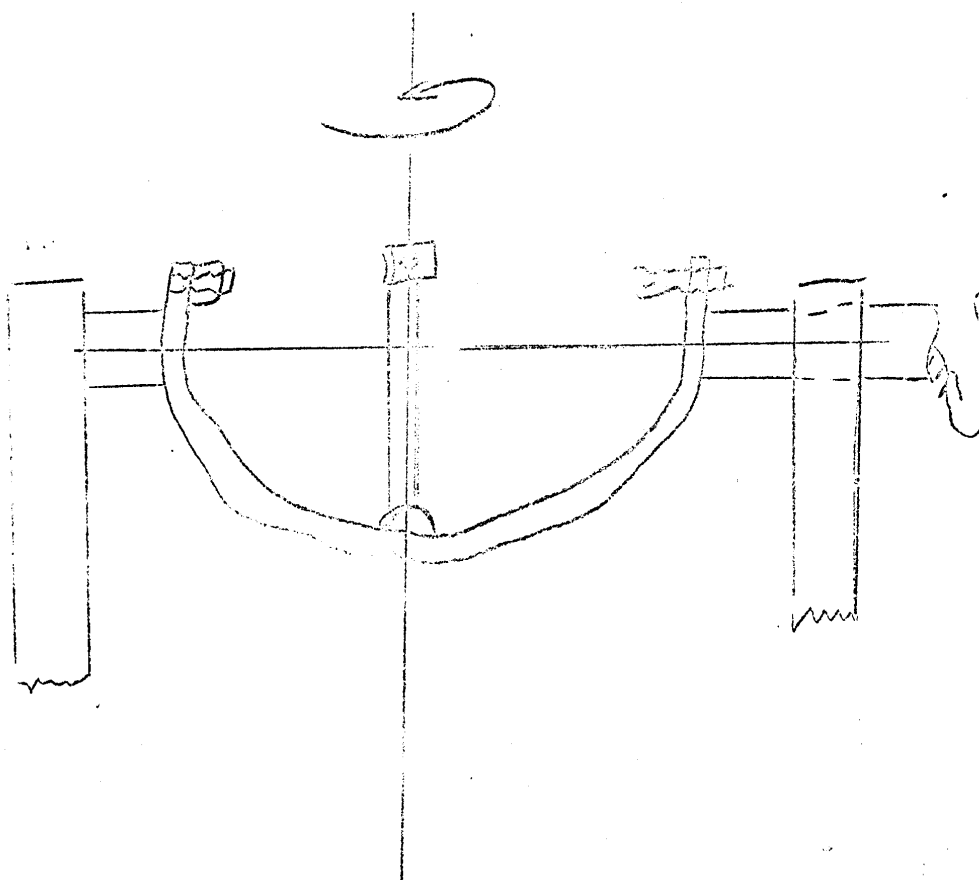
50X1-HUM

C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

-24-

Sketch 5 of a Tool Designed at Plant 456



C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

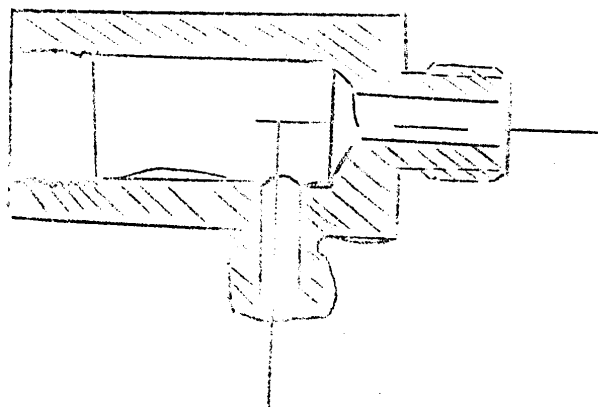
C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

-25-

ATTACHMENT

Sketch No. 6 of a Part Designed at Plant 456



C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM